REMARKS

This response follows an action of April 20, 2001 rejecting claims 1-8. The Examiner has suggested that the term "run-flat" be inserted into the claims to distinguish this invention over the prior art and provide the necessary context. The Examiner is correct that Applicant's invention is directed to a specific run-flat tire. Such is set forth on page 1 in the back ground section to the invention and which the term "run-flat" relates to a class of tires having the ability to still perform, that is run at high speed over relatively long distance even when punctured, that is the ability of a tire having been punctured to retain its dynamic qualities.

The Applicant has thus acquiesced to the Examiner's suggestion and added this requirement to each of the claims.

Separately, the Applicant has added a limitation to the claims dealing with the location of the rubber protection sheets. These sheets are 11, 12 and 13 as depicted in Figures 1-3. As illustrated in those Figures the rubber protection sheets are arranged within a zone extending inward from a position of a straight line Lq that passes through the outer end Q of the bead filler rubber 8 in the radial direction. Moreover, the straight line Lq is parallel to the rotational axial line of the tire. The zone is preferable to be also defined by a straight line Lr that passes through an inner end R of the rubber reinforcing layer and is also parallel to the rotational axis of the tire.

This limitation on location of the rubber protection sheet found in claim 1 requires that it be "disposed between the rubber reinforcing layer and the carcass ply nearest there to and within a zone extending inward from a position of a line segment in parallel to the rotating axial line of the tire passing through an outer end of the bead filler and the radial direction tire". Thus, this amendment is supported specifically by the disclosure of the application as originally filed.

This invention, as recognized by the Examiner deals with a run-flat pneumatic tire. The tire has a reinforced side portion in which there is a specific improvement to the durability of the bead portion of the tire when running in its run-flat configuration.

By way of back ground, the Applicant refers to Figure 7 of the Application. As illustrated in that Figure and described in the specification, the tire undergoes a very large strain and stress during a run-flat condition. Given the construction of the tire, three regions of the tire are defined as having three distinct and unique problems associated with each region. These regions are denoted by a α β γ. In the first region which is in the bead portion of the tire and denoted as α, a large shearing strain occurs between the bead filler rubber and the carcass ply that surrounds it. That is, in Figure 7 the carcass ply 6 is denoted by the dotted line which is wrapped from inside to out around the bead core and bead filler. And also, this large shearing strain occurs between a portion of the rubber reinforcing layer which is located opposite to the bead filler rubber and the carcass ply nearest thereto.

Thus, a specific object of this invention is to improve the durability existing within this region of the bead portion by disposing a rubber protection sheet between the bead filler rubber and the carcass ply surrounding it and/or between the portion of the rubber reinforcing layer located opposite to the bead filler rubber and the carcass ply nearest thereto.

Claims 1-4 stand rejected as anticipated by Deck et al., - 924. Rejection is respectfully traversed. Deck et al., does relate to a safety tire which has supporting shaped parts 20 consisting of two subparts 20_1 which is made of a more flexible mixture and a part 20_2 made of a less flexible mixture. The component 20_1 is disposed adjacent to the carcass, however, the action and effect of that component is materially different from the rubber protection sheet of the present

invention.

By way of reference, it can be appreciated that Deck et al., is directed to improving the durability of what the Applicant describes here as region β in Figure 7. Consequently, the positing of this component and its shape and size distinguish it from Applicant's invention. Applicant defines in the claims here "at least one rubber protection sheet". The phrase "rubber protection sheet" is important. A sheet by definition is an element which is generally considered to have a uniform and relatively thin thickness. In contrast, the components of Deck et al., identified as element 20_1 have a sectional shape which should be defined lenticular. The artisan thus would not generally define or construe this reference as sheet of material.

Thus, by amendment in distinguishing comments here it is believed that Deck et al., has been distinguished relative to the holding of anticipation. Additionally, the Examiner's comments concerning whether Deck et al., has a run-flat capability are noted.

The rejection to the remaining claims based on Deck et al., alone or to Deck et al., in view of Ghilardi - 252 are respectfully traversed. The cover element 15 illustrated in Figures 1-4 of the - 252 reference are incompatible with those of Deck et al., in that they are not rubber sheets but rather lenticular in terms of their sectional shape.

Additionally, in terms of a rejection predicated on obviousness neither Deck et al., nor Ghilardi disclose or in any way suggest the particular positioning of a rubber protection sheet in definitive region of the tire to reduce shearing strain. In contrast, the Applicant sets forth here a particular construction in which a shearing strain between those tire elements is reduced. The result then is a reduction in the separation failure which can be controlled resulting in an overall improvement of the durability of the tire in a particular region.

This improvement is more than amply set forth by the comparative test data provided by the Applicant beginning with the experiments described on page 18 beginning at line 14. Reference is made to the test data set forth in Table 1 and also provided in Figure 10. To the extent that a holding of prima facie obviousness is deemed to exist, it is believed that such is affirmatively overcome by that comparative test data. The Applicant thus requests that the Examiner reconsider the rejections based on obviousness because not only do the claims define subject matter in the context of a run-flat tire which the prior art does not perceive. But, the same subject matter has been demonstrated to demonstrate unexpected and improved results when compared to prior art tires of the same type.

On that basis then, the Applicant respectfully contends that claims 1-8 in their amended form are allowable. Should the Examiner have any questions he is requested to contact the undersigned attorney of record at the local exchange listed below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

Claim 1. (Amended) A run-flat pneumatic tire comprising; a radial carcass extending between a pair of bead cores embedded in the respective bead portions to reinforce a pair of sidewall portions, [and] a tread portion [and] comprised of one or more rubberized cord plies, a belt arranged on an outer peripheral surface of the carcass to reinforce the tread portion, a bead filler rubber taperingly extending from a position just above the bead core toward an end of the tread portion, [and] a rubber reinforcing layer arranged at an inner surface side of an innermost carcass ply from a position near to the bead core in the bead portion to a position near to the end of the tread portion and having substantially a crescent shape at section thereof, [in which] and at least one rubber protection sheet being relatively soft [is] disposed between the bead filler rubber and the carcass ply surrounding it, and/or, disposed between the rubber reinforcing layer and the carcass ply nearest thereto and within a zone extending inward from a position of a line segment in parallel to the rotating axial line of the tire passing through an outer end by the bead filler rubber in the radial direction of the tire.

Claim 2. (Amended) A run-flat pneumatic tire according to claim 1, wherein at least one ply of the carcass is a turnup ply wound around the bead core from an inside of the tire toward an outside thereof, which consists of a toroidally extending main body and a turnup portion.

Claim 3. (Amended) A run-flat pneumatic tire according to claim 1, wherein in a radial section of a tire-rim assembly when the tire is mounted onto a recommended rim and inflated under a pressure corresponding to 15% of a maximum air pressure, the rubber protection sheet is existent over both sides of a straight line drawn from a curvature center of a flange of the recommended rim at an inclination angle 60° outwardly in a radial direction of the tire with respect to a line segment drawn from the curvature center in parallel to a rotating axial line of the tire toward the inside of the tire.

Claim 4. (Amended) A run-flat pneumatic tire according to claim 1, wherein the rubber protection sheet is existent between line segments in parallel to the rotating axial line of the tire respectively passing through an outer end of the bead filler rubber in the radial direction of the tire and an inner end of the rubber reinforcing layer in the radial direction of the tire.

Claim 5. (Amended) A run-flat pneumatic tire according to claim 2, wherein when the rubber protection sheet is disposed along the turnup portion of the carcass ply between the turnup portion and the bead filler rubber, a height of an outer end of the rubber protection sheet in the radial direction of the tire as measured from an outermost end of the bead core in the radial direction of the tire is not more than two times a height of an intersecting point between the straight line drawn from a curvature center of a flange of the recommended rim at an inclination angle of 60° outwardly in a radial direction of the tire with respect to a line segment drawn from a curvature center in parallel to a rotating axial line of the tire toward the inside of the tire and an outer surface of an outermost carcass ply as measured by the above same method.

Claim 6. (Amended) A run-flat pneumatic tire according to claim 1, wherein the rubber protection sheet has 50% modulus of 0.30-0.84 times that of the rubber reinforcing rubber.

Claim 7. (Amended) A run-flat pneumatic tire according to claim 1, wherein the rubber protection sheet has tan δ at 25°C of 0.04-0.11.

Claim 8. (Amended) A run-flat pneumatic tire according to claim 1, wherein the rubber protection sheet has a thickness of 0.4-4.0mm.